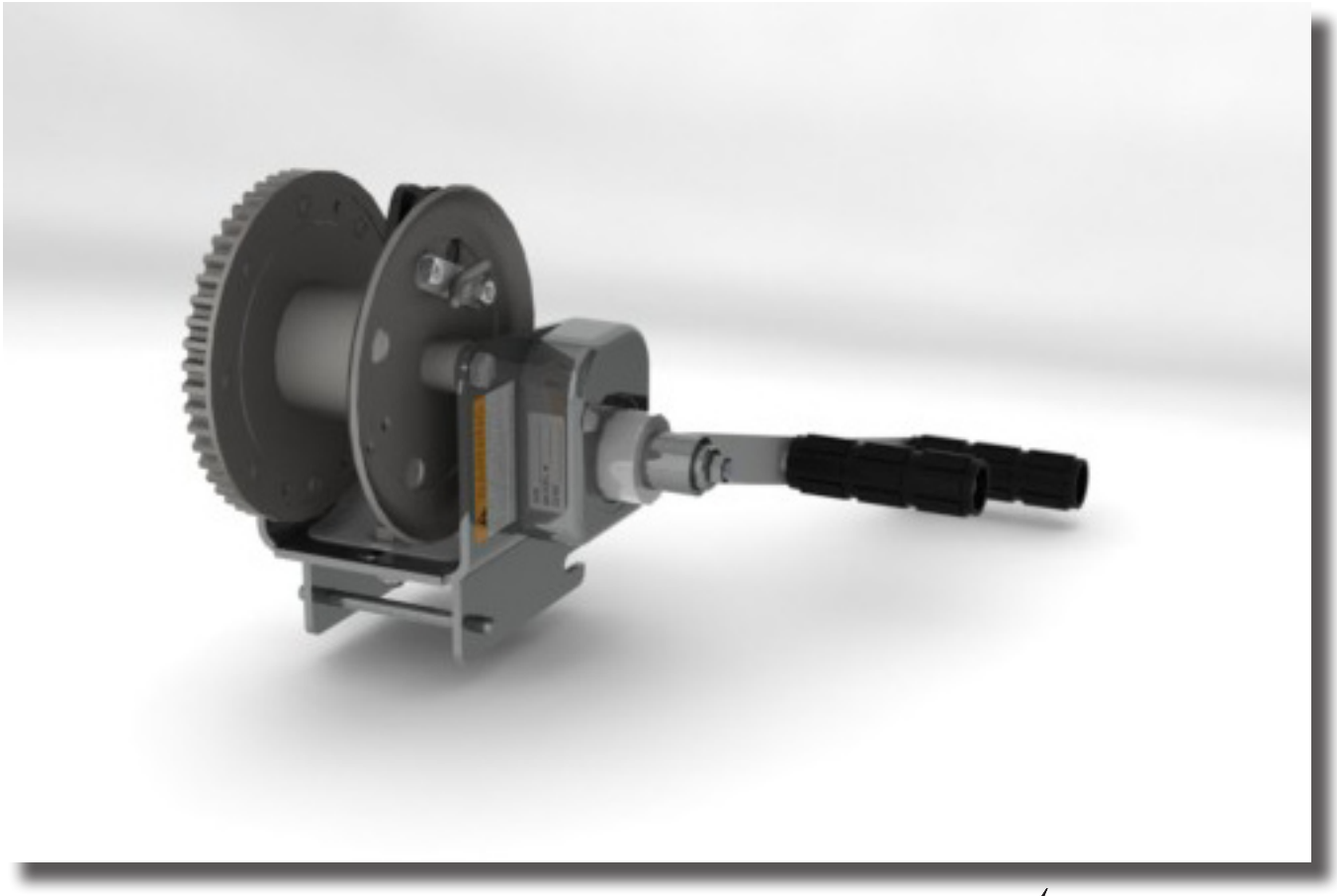
Part #500138-QR1

Product Manual:

Model #PWQR Series Quick Release Man-Rated Winch



PELSUE®

ISO 9001 Certified

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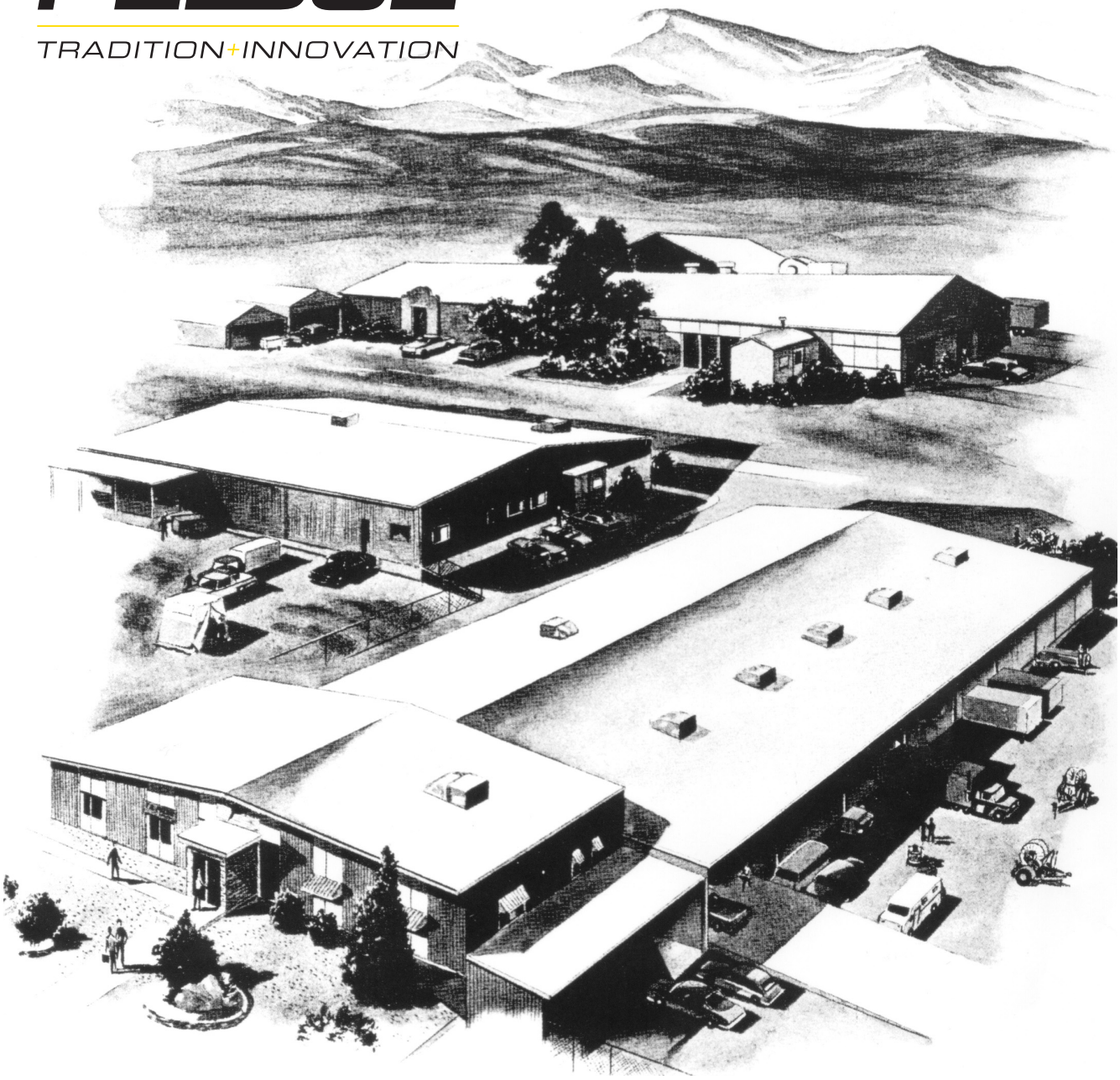
PELSUE®

TRADITION+INNOVATION

ISO 9001 Certified



Since our inception in 1963 – the T.A. Pelsue Company has designed and manufactured high quality equipment to improve the personnel efficiency and working conditions in various underground, confined, and outdoor areas.

Founded by T. Allen Pelsue, the company has established a continuing reputation for excellence in the production of fine products for a broad spectrum of industry throughout the world.

Now, in our second generation of family direction, continued commitment to innovation and quality makes Pelsue a leading source of equipment for many types of confined spaces. We specialize in safety, retrieval, fall arrest, ventilation, cable placing, splicing, and maintenance nationally and abroad. With more than 70,000 square feet of facilities available, Pelsue continues the dedication that has made us pre-eminent in this field.

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T.A. Pelsue Company

Quality Policy

OUR GOAL IS THE PURSUIT OF NEVER-ENDING IMPROVEMENT IN PRODUCT QUALITY AND BUSINESS SYSTEMS.

METHODS TO BE EMPLOYED IN ATTAINING THIS GOAL WILL INCLUDE NEW PRODUCT QUALITY PLANNING, EMPLOYEE TRAINING, AND UTILIZATION OF EMPLOYEE INVOLVEMENT GROUPS TO SOLVE PROBLEMS.

IN AN INCREASINGLY COMPETITIVE MARKETPLACE, ENSURING CUSTOMER SATISFACTION IS ONE OF THE DIFFERENTIATORS THAT SETS YOU APART FROM THE PACK AND YIELDS A COMPETITIVE ADVANTAGE.

THEREFORE, WE WILL SUPPORT TOTAL CUSTOMER SATISFACTION BY IMPLEMENTING THE **ISO 9001 QUALITY SYSTEM** AND PROVIDING THE NECESSARY ATMOSPHERE AND TRAINING TO NURTURE THIS CONCEPT THROUGHOUT OUR ORGANIZATION.

WE WILL MAKE EVERY BUSINESS DECISION AS THOUGH THE QUALITY OF THE PART OR SERVICE PROVIDED WAS DESTINED FOR OUR OWN OR OUR FAMILY'S USE. WE WILL ALWAYS THINK **QUALITY FIRST.**

EVERY T.A. PELSUE COMPANY EMPLOYEE IS EXPECTED TO COMMIT TO THIS PHILOSOPHY IN THE PERFORMANCE OF HIS OR HER DAILY TASKS.

QUALITY FIRST!

T.A. PELSUE COMPANY SENIOR MANAGEMENT TEAM

1.2 - Pelsue Product Warranty

Pelsue products are designed and engineered to perform as stated in published specifications. Quality materials and workmanship are used in the manufacture of this product. With regular maintenance and proper care, Pelsue equipment provides many trouble free hours of operation.

The T.A. Pelsue Company warrants to the buyer that the Hoist Product furnished will conform to specifications and will be free from defects in material and workmanship from the date of shipment to the original buyer, for a period of 3 months (90 days). In the event of failure of any components of a Pelsue product within the warranty period, service must be pre-approved by the T.A. Pelsue Company, and service must be performed by the T.A. Pelsue Parts and Service Department in Englewood, Colorado, or at the option of the T.A. Pelsue Company, service may be performed at any designated service center, which may include any authorized service center for the component manufacturer. Unauthorized repairs will not be covered by this warranty.

Damage or failure due to misuse, mishandling, or unauthorized modifications will not be covered by this warranty. Unless otherwise agreed, the T.A. Pelsue Company shall repair or replace the defective components within (30) calendar days of notice of failure. T.A. Pelsue Company's obligation hereunder, shall be limited to the repair or replacement of the product or component as set forth above and shall not include any liability whatsoever for damages caused by such failure, including, but not limited to consequential or incidental damages flowing from use or lack of use of product.

Any replacement, repair, modification, installation, or other service performed by the T.A. Pelsue Company shall be warranted by the remainder of the unexpired period of the warranty, or for a period of (90) calendar days, whichever is longer.

All materials or parts returned for credit or warranty shall be returned only with prior approval, and will be subject to factory inspection before credit is allowed, Parts claimed defective will be replaced upon request and will be invoiced as purchased, subject to credit when the parts claimed to be defective have been received and examined by the factory.

This warranty is expressly in lieu of all other warranties expressed or implied, including any warranties of merchantability or warranties of fitness for any particular use and all other obligations or liabilities in connection with the sale of this equipment.

T.A. Pelsue Company, 2500 South Tejon Street, Englewood, Colorado 80110, 800-525-8460

2.0 - Introduction & Product Information

Congratulations on your choice of a Pelsue man rated confined space entry/retrieval system winch to compliment your entry/retrieval operation. This equipment has been designed and manufactured to exceed confined space requirements and regulations to meet the needs of the discriminating operator for the efficient and safe entry or retrieval of personnel from a confined space.

Safe, efficient and trouble-free operation and maintenance for your component or system requires that you or anyone else who will be operating, maintaining, or inspecting the equipment, read, understand and follow all the safety, installation, operation, maintenance and inspection instructions contained in this manual. This manual covers the entire line of PWQR series winches manufactured by Pelsue. Use the Table of Contents or Index as a guide to find specific information.

Keep this manual handy for frequent reference and to pass to new operators. Establish a regular training program for experienced and new operators per these instructions. Establish a regular maintenance and inspection program to keep the equipment in top condition.

⚠ WARNING

This product is a part of a man rated confined space entry/retrieval system. The user must read, understand and follow the instructions contained in this manual for each component or total system before using this equipment. Establish an appropriate training, maintenance and inspection program for your people and the equipment. Failure to follow these instructions could result in serious injury or death.

2.1 - Serial Number

Always give your dealer the serial number of your Pelsue PWQR series confined space entry/retrieval winch when ordering parts or requesting service or other information.

The Serial number decal is embossed with the winch's serial number as well as a Date of Manufacture (DOM). The serial number decal will appear as shown in below Figure 2a. Please mark the number in the space provided for easy reference. The serial number decal is permanently affixed to the winch. The serial number decal is located on the Pawl Cover at the drive handle side of the winch (see Figure 2b) where indicated. !Do Not Remove the serial number decal!

Winch Model:_____

Serial Number:_____

Date Of Manufacture (DOM):_____

S/N# _____
MODEL# _____
DOM _____

Figure 2a: Serial Number Decal

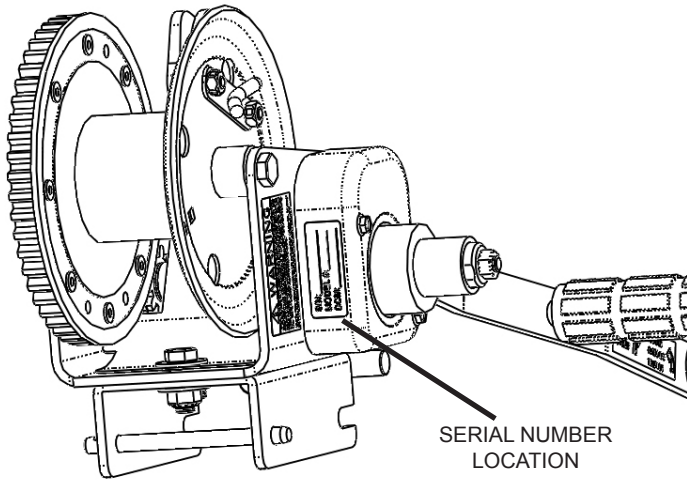


Figure 2b:
Serial Number Location

3.0 - Configuration & Components

The PWQR series winch is designed to extend and retract a line from a coiling drum that is to be used as a tether line when performing a confined space entry. Such a tether is required within OSHA and ANSI standards for confined space entry operations The winch also satisfies the requirement for a emergency retrieval system if and when the need is required. The PWQR is designed with an internal braking system to prevent the accidental pay out of line, as well as a back-up locking pawl system to prevent "free-wheeling" of the winch. Line extension or retraction is controlled by the crank handle which is attached to the drive shaft. The PWQR Series Winch can hold a maximum of 70 feet of Synthetic Rope.

The winch frame is capable of bolting to a wide variety of adapter brackets (available from Pelsue) which then allows quick-attachment of the winch to virtually any approved retrieval anchorage (i.e. davits and tripods).

Cable extension (pay out) should occur **ONLY** when the handle is turned **AND** a force of **AT LEAST** 10 lbs.(4.5 kg.) is applied to the line. With no applied force on the line, turning of the handle should **NOT** cause the drum to move. If the drum rotates under these conditions, the winch should be removed from service and sent to Pelsue for inspection and possible repair.

PWQR & PWQRR series winches have rotations the reverse of each other. Refer to Decals #121298-001 & #12198-R01 below for information regarding their respective rotations.

NOTE: This winch is equipped with a safety mechanism which prevents the accidental pay out of large amounts of cable. In the absence of constant tension on the cable, the crank handle will continue to turn, however, cable WILL NOT come off of the drum. It will appear that the handle has come loose; THIS IS NOT THE CASE. It cannot come free of the shaft. Simply turning the handle in a clockwise manner will cause the handle to pay in cable after a maximum of five (5) revolutions before the lifting brakes are once again engaged.

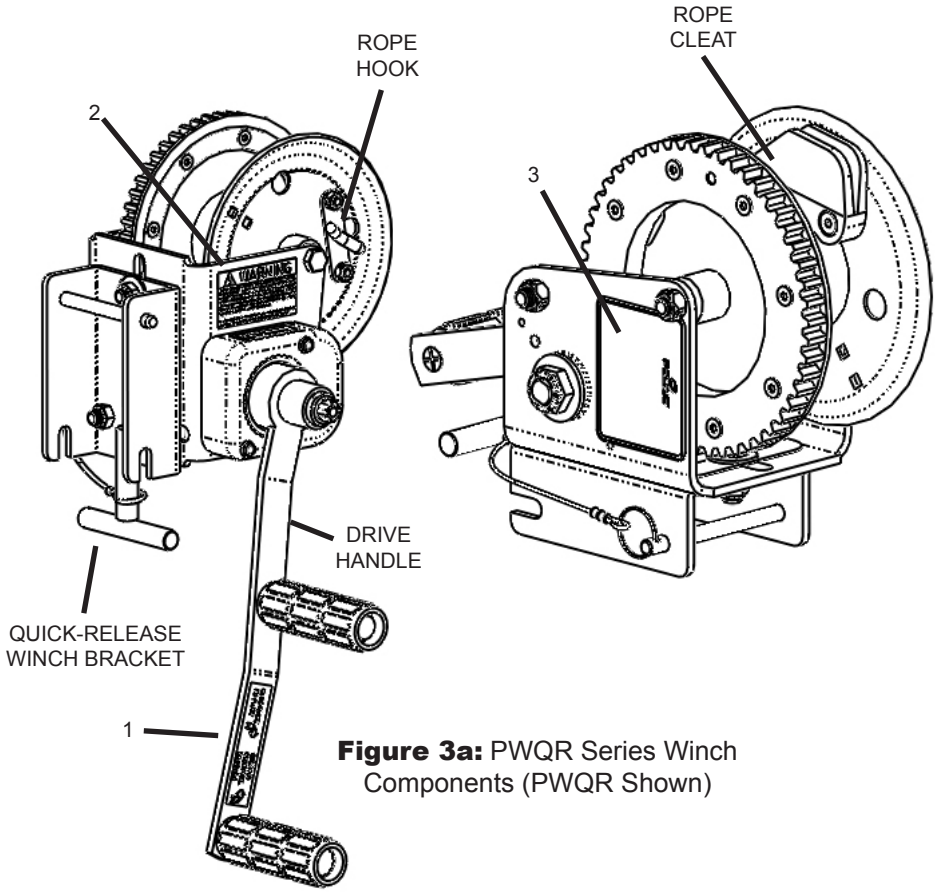
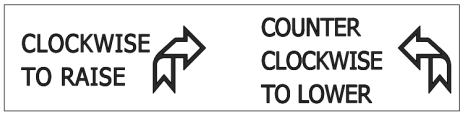
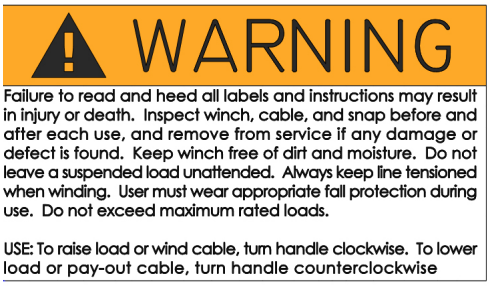


Figure 3a: PWQR Series Winch Components (PWQR Shown)



1) 121298-001 (PWQR Winches)

1) 121298-R01 (PWQRR Winches)


WARNING
Failure to read and heed all labels and instructions may result in injury or death. Inspect winch, cable, and snap before and after each use, and remove from service if any damage or defect is found. Keep winch free of dirt and moisture. Do not leave a suspended load unattended. Always keep line tensioned when winding. User must wear appropriate fall protection during use. Do not exceed maximum rated loads.
USE: To raise load or wind cable, turn handle clockwise. To lower load or pay-out cable, turn handle counterclockwise

2) 121297-001

P/N 500998-001
PELSUE
PWQR SERIES PERSONNEL WINCH
LOAD CAPACITY: 310 LBS. (140 KG.)
GEAR RATIO: 5:1
MINIMUM CABLE LOAD: 10 LBS. (4.5 KG.)
! WARNING !
ROPE MUST BE SECURED IN CLEAT & WRAPPED AROUND DRUM A MINIMUM OF FOUR TIMES BEFORE FULL-LOAD CAPACITY (310 LBS.) IS CAPABLE ON THE WINCH. REFER TO PRODUCT MANUAL FOR FULL OPERATIONAL GUIDELINES
T.A. PELSUE COMPANY
2500 SOUTH TEJON STREET
ENGLEWOOD, COLORADO 80110
www.pelsue.com

3) 500998-001

4.0 - Safety

Section 4.0 will deal with safety procedures and precautions that are to be addressed and adhered to when employing Pelsue PWQR series winches or any other piece of rescue and retrieval equipment.

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guidelines:

DANGER- Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations or for hidden or unseen hazards.

WARNING- Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury and includes obvious and hidden hazards. It may also be used to alert against unsafe practices.

CAUTION- Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

You are responsible for the safe operation, maintenance and inspection of your Pelsue man rated confined space entry/retrieval system. You must ensure that you and anyone else who is going to operate, maintain, inspect or work around the equipment be familiar with the operating and maintenance procedures and related safety information contained in this manual. This manual will take you step-by-step through the winch's operation and will alert you to all good safety and operating practices while using the device.

Remember, you are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that everyone operating this equipment is familiar with the procedures recommended and follows safety precautions. Remember, most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- System owners must give operating instructions to operators or employees before allowing them to use the equipment and at least annually thereafter.
- The most important safety device on this equipment is a safe operator. It is the operator's responsibility to read and understand all safety and operating instructions in the manual and to follow these. Accidents can be avoided.
- A person must understand the operation of this equipment and be trained in it's usage before operating the equipment. An untrained operator exposes himself and others to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

4.1 - Warning Statement

WARNING!

Products manufactured or sold by T.A. Pelsue Company are intended for use by professionals trained and experienced in the use, inspection and maintenance of these products.

Paraprofessional users such as volunteer rescue workers and sportsmen involved in risk sports such as climbing and caving will be held to the same standard of experience and training as professionals.

Technical rescue, repelling, climbing and the training involved are hazardous activities. Each situation has its own unique conditions and must be evaluated. Effective risk management comes from experience, proper training and good personal judgement.

⚠WARNING⚠

Failure to read and heed all labels and instructions may result in injury or death. Inspect all components before and after each use, and remove from service if any damage or defect is found. Keep product free from dirt and moisture. Do not leave a suspended load unattended. Do not exceed maximum rated loads.

4.2 - Safety Alert Symbol

SAFETY ALERT SYMBOL

This Safety Alert symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

The Safety Alert symbol identifies important safety messages on your Pelsue Retrieval Product and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instruction in the safety message.

Why is this symbol important to you?

3 BIG Reasons: **Accidents Disable and Kill.**

Accidents Cost You Money.

Accidents Can Be Avoided.

4.3 - General Safety

1. Read, understand and follow the User Manual and all safety signs before using, maintaining or inspecting the equipment.
2. Refer to and follow applicable standards and regulations. Comply with requirements of local regulations for your applications.
3. Establish an equipment-use training program for inexperienced employees. Only trained, competent persons shall use the equipment. An untrained operator is not qualified to operate the system.
4. Have a first-aid kit available for use should the need arise and know how to use it.
5. Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.
6. Install and properly secure all guards and shields before operating.
7. Wear appropriate protective gear. This list includes but is not limited to:
    - A hard hat
    - Protective shoes with slip resistant soles
    - Heavy gloves
    - Protective clothing
    - Face Protection
8. Review and follow the Pre-Operation Checklist before using a component in the system or system itself.
9. Establish a regular maintenance and inspection program with your equipment and maintain detailed records.
10. Review safety related items and operating instructions with all personnel on a regular basis.

4.4 - Operating Safety

1. Read, understand and follow the User Manual and signs on the winch before using, maintaining or inspecting the equipment.
2. Train all operators before allowing them to use the winch. An untrained operator exposes themselves, bystanders and workers to possible serious injury or death.
3. Visually inspect the winch and all auxiliary components and equipment before using. Correct any problems before using the equipment.
4. Securely anchor the winch before using.
5. Use only certified anchor and connector components in your system.
6. Use only an approved full body harness for the workers.
7. Always work in teams. One person works in the confined space and the other one pays out the line and reels it in.
8. Do not exceed 310 lbs.(140 kg.) on the line during operation. (Including tool belts, etc.).
9. Establish a regular training program for new as well as experienced workers.
10. Establish a detailed inspection program for your equipment and document the findings. Return the equipment to the manufacturer for re-work if any problems are found.
11. Plan your work program before starting. Have the required people, equipment and procedures available to do the job.
12. Do not use the equipment around physical or environmental hazards. This list includes but is not limited to:
    - Corrosion that may affect the structural integrity of the lifeline or other components.
    - Chemicals which can degrade components in a manner which can not be visually identified.
    - Toxic gases: Rescuers or workers can be killed in toxic environments.
    - Heat or elevated temperatures.
    - Moving machinery: Workers or auxiliary equipment can be contacted by or pulled into moving components.
    - Sharp edges: Workers or the rescue equipment can be injured by or damaged by sharp edges or components.
    - Electrical hazards: Stay away from power lines or components carrying electrical power.
    - Overload: Do not exceed 310 lbs.(140 kg.) during operation.
    - Follow confined space regulations and standards.

4.5 - Maintenance & Inspection Safety

1. Read, understand and follow the User Manual and signs on the winch before using, maintaining or inspecting the equipment.
2. Safe operation of this winch requires a regular inspection program and the maintaining of documented results of these inspections. Follow the inspection procedure contained in this manual and use the inspection form to document the results.
3. Keep instructional and safety signs clean and legible at all times. Clean or replace as required.
4. Remove the equipment from service if a problem is found during the inspection. Return to an authorized repair depot or the factory for service.

5.0 - Operation

Section 5.0 will address the basic operation and usage of a Pelsue PWQR Series Man-Rated winch. Throughout this section and during operation of the PWQR winch, the operating safety section of this manual should be constantly referred to and the points addressed therein should be continually adhered to during all operation. These points have been repeated below.

⚠ OPERATING SAFETY

1. Read, understand and follow the User Manual and signs on the winch before using, maintaining or inspecting the equipment.
2. Train all operators before allowing them to use the winch. An untrained operator exposes themselves, bystanders and workers to possible serious injury or death.
3. Visually inspect the winch and all auxiliary components and equipment before using. Correct any problems before using the equipment.
4. Securely anchor the winch before using.
5. Use only certified anchor and connector components in your system.
6. Use only an approved full body harness for the workers.
7. Always work in teams. One person works in the confined space and the other one pays out the line and reels it in.
8. Do not exceed 310 lbs.(140 kg.) on the line during operation. (Including tool belts, etc.).
9. Achieve 4 complete wraps of rope on the drum before loading the device to its full capacity.
10. Establish a regular training program for new and experienced workers.
11. Establish a detailed inspection program for your equipment and document the findings. Return the equipment to the manufacturer for re-work if any problems are found.
12. Plan your work program before starting. Have the required people, equipment and procedures available to do the job.
13. Do not use the equipment around physical or environmental hazards. This list includes but is not limited to:
    - Corrosion that may affect the structural integrity of the lifeline or other components.
    - Chemicals which can degrade components in a manner not visually-indentifiable.
    - Toxic gases: Rescuers or workers can be killed in toxic environments.
    - Heat or elevated temperatures.
    - Moving machinery: Workers or auxiliary equipment can be contacted by or pulled into moving components.
    - Sharp edges: Workers or the rescue equipment can be injured by or damaged by sharp edges or components.
    - Electrical hazards: Stay away from power lines or components carrying electrical power.
    - Overload: Do not exceed 310 lbs.(140 kg.) during operation.
    - Follow confined space regulations and standards.

5.1 - New Operators or Owners

The Pelsue PWQR Series confined space entry/retrieval winch is designed to attach to a person (entrant) and allow them to enter a confined space and assist in exiting in an emergency situation if required. Every new operator must read, understand and follow the instructions in the manual. No one should be allowed to use the equipment without training. The training should be reviewed with experienced operators on a regular basis. At regular intervals, perform a detailed inspection of the equipment and document the results. Remove from service if deficiencies are found. Alterations or misuse of this equipment or failure to follow instructions may result in serious injury or death.

It is the responsibility of the owner's organization or operator to read this manual and to train all other operators before they start working with the equipment. Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site. Untrained operators are not qualified to operate the equipment.

Many features incorporated into this equipment are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the equipment safely and how to set it to perform as intended. By following the operating instructions in conjunction with a good maintenance program, your winch will provide many years of trouble free service.

5.2 - Pre-Operation Inspection

It is necessary to perform a detailed visual inspection prior to using the winch. If deficiencies are found, remove the winch from service and return to the Pelsue factory for repair. This checklist should be used as a guide to determine whether the equipment is in good operating condition prior to usage. Equipment that is not in good condition can endanger the safety of the entrant during use.
The visual inspection must include but is not limited to the following items.

1. Check that the winch has no structural defects.
2. Be sure that the winch is clean and the labels are legible.
3. Functional check:
   a. Pull on the rope and turn the crank handle to extend the rope.
   b. Turn the crank handle in the opposite direction until 2 clicks of the ratchet is heard to engage the brake.
   c. Release the crank handle and pull hard on the rope. Crank should not move and rope should not extend.
   d. Slightly tension the rope and turn the crank handle to retract the rope.
4. Inspection of the synthetic rope:
   a. Check the rope for fraying, kinking, cuts, wear, cut outer sheath or jacket, weld strike marks or a change in diameter of rope (crushing) or any other defect which may affect the structural integrity of the rope.
   b. Check that the rope crimps are intact and in good condition.
   c. Check that the snap hook is in good condition. Be sure that the gate will not open unless the lock is released. The snap should also be free from rust as this is a sign of weakness.
5. If the winch is not in good condition, remove from service and tag for shipment to an authorized repair depot or the factory for repair. Using a winch that is not in good condition can lead to a hazardous condition for entrant(s).
6. Go through the detailed inspection procedure on a regular basis (at least annually) per the Inspection Section of this manual. Document the results using the sample form and retain for your files.
7. A detailed inspection is required after each duty cycle.

5.3 - Applications

1. General

Pelsue PWQR series man rated winches are designed to be used in confined space rescue & retrieval applications. The winch extends and retracts a line as the handle is turned. When the handle is turned, an internal brake holds the drum and the line will not extend or retract.

2. Scope

The winch works well in both vertical and horizontal applications. However, different mounting, anchoring and support systems are required for each type of application. The user has the responsibility of reading and following the instructions for the other systems in addition to the winch. Misuse or abuse of any component can create hazards for personnel.

3. Emergency Rescue

In emergency situations, use the winch to remove personnel from a hazardous or an unsafe environment. In these situations, a back-up fall arrest system may be required. Be sure to use a proper mounting and anchoring system for the winch. Use only an approved harness for personnel. Always be aware of the system limitations and follow the instructions.

4. Limitations

Operators must be aware of several limitations on the use of the winch whenever it is used and plan their work accordingly. Limitations include but are not limited to:

a. Corrosion

Do not keep the winch in an area that has a corrosive atmosphere. Corrosive vapors can be released by sewage plants or in fertilizer plants. Sea water or spray can also cause corrosion to the case, lifeline or other components. Long term exposure to these types of environments will require more frequent inspections to ensure that the function of the unit has not been affected.

5.3 - Applications (continued)

b. Chemical or Toxic Environments
Work environments that contain strong acids, bases or other corrosive chemicals in solutions, sprays or vapors may damage the winch or auxiliary components. Inspect the unit frequently to detect any damage or change in functionality of the unit. Chemical damage may be difficult to detect visually and periodic lifeline replacement is recommended to insure safety.

c. Electrical Hazards
Stay away from power lines or other components carrying electrical power. The synthetic rope utilized on the PWQR series winch is generally non-conductive, however, hazards still exist around electricity. Remember, electricity can jump across an air gap and electrocute personnel using the winch. Contact your local utility to remove or disconnect the power before working around these components.

d. Load Capacity
Do not exceed the winch capacity of 310 lbs. or 140 kg. (includes people, harness, tools, etc.). Do not carry more than one person at a time on the lifeline. Overloading the winch can exceed the design safety factors and could create hazards.

d. Training
Do not allow anyone to use this winch unless they are trained in its limitations and use. Untrained operators can expose themselves and others to hazards. Train new operators before using the unit. Review operating procedures on a regular basis with experienced personnel.

5.4 - System Requirements

Pelsue PWQR series man-rated winches are a component in a confined space entry/retrieval system. The winch and all auxiliary components must be compatible to prevent creating unexpected hazards. A list of system compatibility requirements includes but is not limited to:

1. Anchorage
The winch is designed to be attached to a Pelsue mounting and support system. These systems do provide the required anchorage strength for the winch. When using another system or anchorage method, anchorage points must meet or exceed the requirements of the applicable standards or local regulations. Qualified people are required to approve non-standard anchorage systems before they are used.

2. Connectors
Use only approved connectors with sufficient capacity that have an anti-rollout device designed into the snap. Non-approved connectors can open during use and create unexpected hazards. Do not use them.

3. Personnel Harness
Use only an approved full body harness. Do not use a single belt or strap system. Only a full body harness can provide the required support for the body to prevent injury.

5.5 - Operation

Pelsue PWQR series man-rated winches are designed for use in many applications including but not limited to rescue or confined space entry/retrieval. It is the responsibility of the operator to be familiar with and follow all applicable OSHA and industry standards on operating guidelines for your project. If you have any questions, consult a qualified person or call the factory.

When using the winch, follow this procedure:

1. Review and follow the Pre-Operation Inspection (Refer to Section 5.3).

2. Inspect the unit prior to each use. Visually check each component to be sure that there is no damaged or missing parts. Check that all systems and components function as intended. Do not use the equipment if any problems are found.

3. Work Planning

Plan your entire work project before starting. Consider all the equipment and system requirements and comply with these requirements before starting. Anticipate the needs before, during and after the project is being done and prepare for these needs. Be prepared for the unexpected by planning in advance. Your advance planning list includes but is not limited to:

a. Anchorage

We recommend mounting the winch to other Pelsue supporting components and systems to be sure that the anchorage has sufficient strength. Pelsue support and mounting systems are designed to ANSI and OSHA standards where required. Refer to other product's owner's manuals for specific strengths. When using other manufactures' anchorages in conjunction with a PWQR winch, be sure that they meet OSHA or local requirements and have capacities equivalent to or greater than the winch being used.

b. Connectors

Connectors, if used, should be equipped with an anti-rollout device to prevent accidental disengagement. Rollout can occur when there is interference between the connector and load that causes the gate or keeper to accidentally open or release. Do not take a chance with safety. Only use approved components.

c. Hazards

Stay away from mechanical, chemical and electrical hazards. Moving machinery, sharp edges or other mechanical hazards can injure personnel, damage equipment or interfere with the work procedure. Chemical, corrosive or toxic environments can damage equipment or affect the well being of personnel. Electrical power can flow through the equipment and electrocute personnel even if there is no direct contact. Sparks or electricity from welding may damage safety lines and cables. Plan your work and rescue procedures to consider these factors and allow for them. Advance planning will allow the equipment to be used safely in a variety of conditions.

d. Rope Path

Body parts, clothing, tools or other items can get entangled or snagged when going around a corner or over obstacles during the retrieval procedure. Corners or sharp edges can also damage the lifeline as it goes by. Ensure that the rope does not come into contact with a heat source or hot object that may damage it. Cautions must be taken when more than one person is tied off separately to prevent the cables from becoming knotted together. Do not step across another rope or lifeline. Be prepared to perform a non-entry rescue to assist in the retrieval of a down entrant.

e. Vertical Applications

For vertical applications, keep the swing-fall angle less than 30 degrees. Serious injuries to personnel can occur if they swing into a solid object. Try to keep the entrant directly below the winch attachment point at all times. Two (2) people are required at all times: the entrant and winch operator. Always maintain communication to be sure the lifeline is kept taut and that the entrant is not encountering problems.

f. Emergency

During retrieval or emergency procedures, the winch anchorage must be capable of supporting at least 1800 lbs.(816 kg.). Always use an approved harness when moving people. People can be seriously injured during rescue or in an emergency situation if they are not supported in an approved harness. However, quick response is required in any emergency or rescue operation.

4. Personal Fall Arrest System (PFAS)

In some entry/retrieval applications, OSHA, ANSI and local standards require that the entrant be connected to a Personal Fall Arrest System. It is the responsibility of the operator to be aware of these requirements and follow them. Always use a full body harness on the entrant when attached to a PFAS to minimize potential injury to the entrant. Application limitations for the winch also apply to a PFAS.

5. Installation/Removal

The Pelsue PWQR series man-rated winches are most commonly used on or with a Pelsue Davit System. Normally, the winch is removed from the davit for storage and transporting. When installing or removing the winch from the davit, follow this procedure:

a. Installing:

i) Be sure that the quick connect mounting brackets are secured to the structure. Refer to the appropriate Structure Manual for bracket mounting details. See Figure 5a.

ii) Attach the winch to the quick connect mounting bracket. Raise the back frame plate over the anchor rod. Align the detent pin hole. Secure the winch using the attached detent pin. See Figure 5b

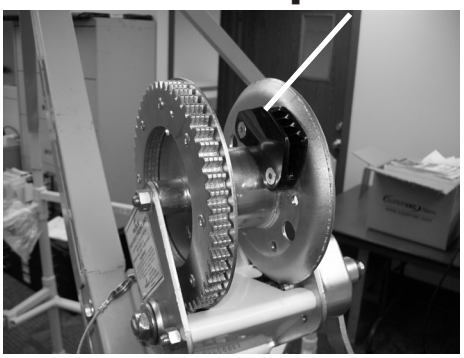
iii) After winch is appropriately installed onto the structure, the rope can now be installed to the quick release winch. See Figures on following page.

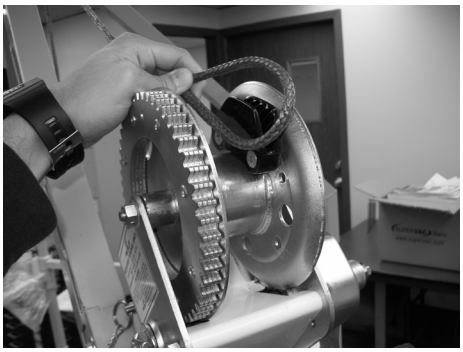
Figure 5a: Davit System
Winch Device Mount

Figure 5b: PWQR Series Winch
Quick-Connecting Sequence

Cleat Attachment - Quickly attach rope to winch in rescue situations.

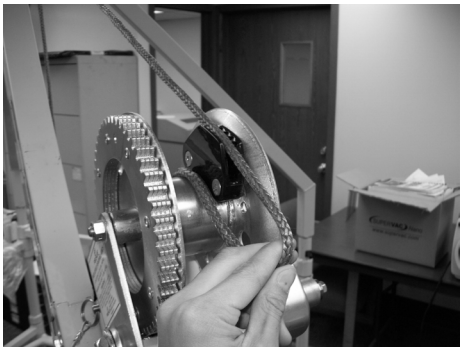
Rope Cleat



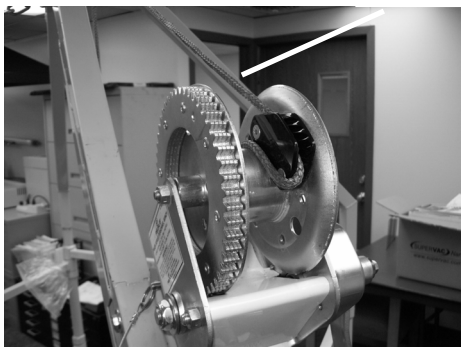


1) Make a loop with the end of the rope leaving some slack to be wrapped around the drum.

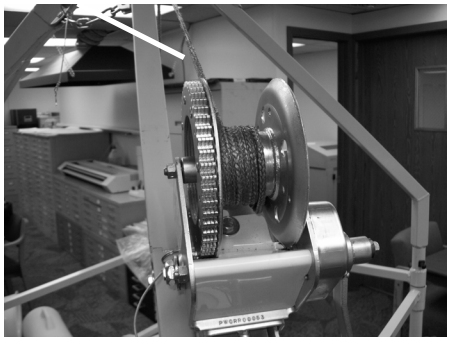
"Live" End



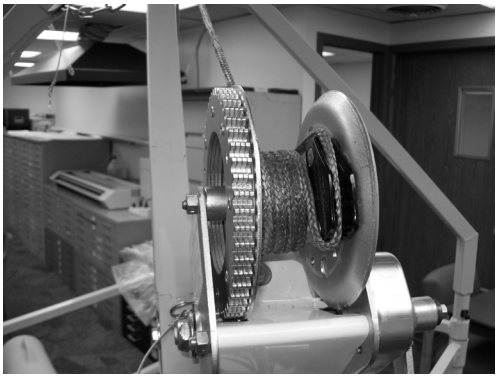
2) Insert the loop as shown over the drum for PWQRR (right hand crank) series winches or under the drum for PWQR series (left hand crank) winches.

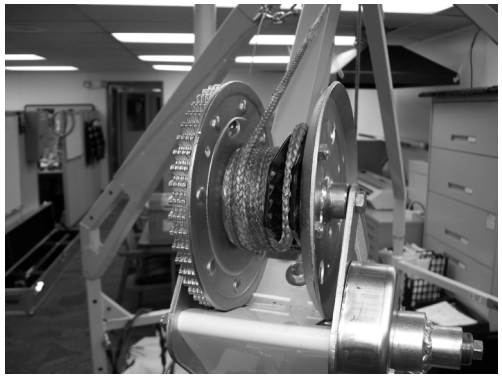


3) Place the "live" end of the rope loop into the rope cleat and the "dead" end of the rope loop to the side of the cleat.



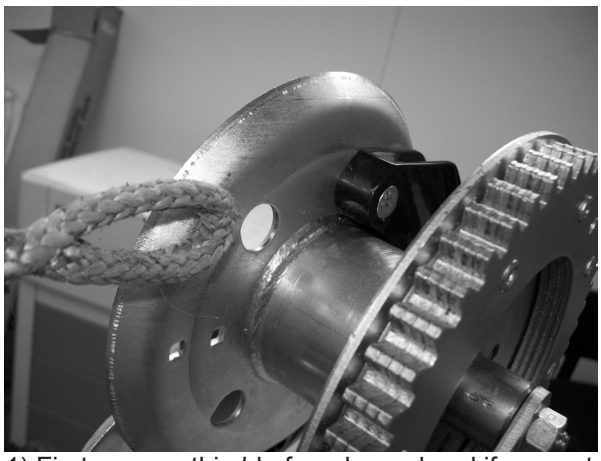
4) Both ends of the rope should now be wound directed into a neat & level coil on the drum while cranking the handle for "take-up" of the lifeline.

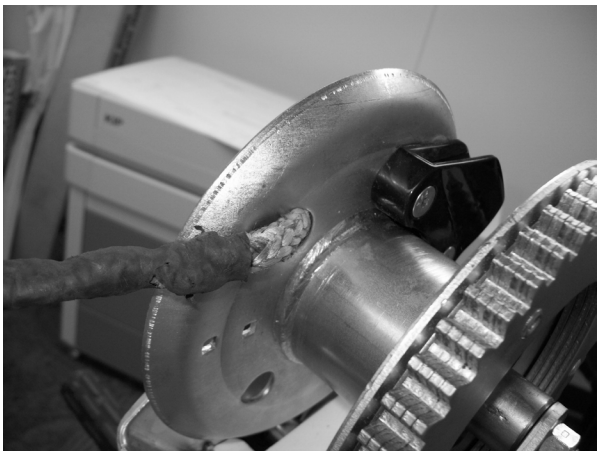




! CAUTION ! - The rope must be secured in the cleat and wrapped around the drum a minimum of **four** times before a load can applied to the winch line!

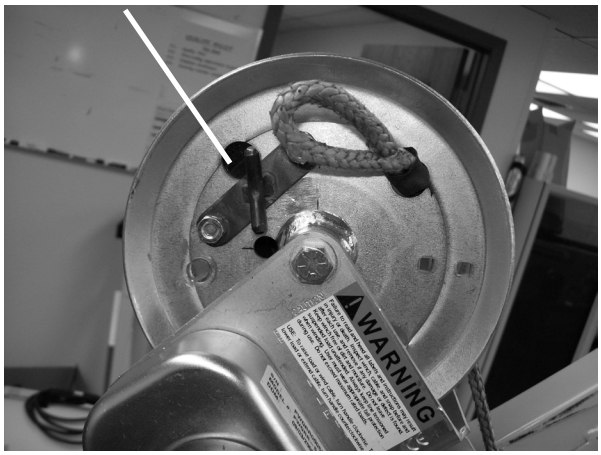
Hook Attachment - Attachment for looped end of rope (when desired).





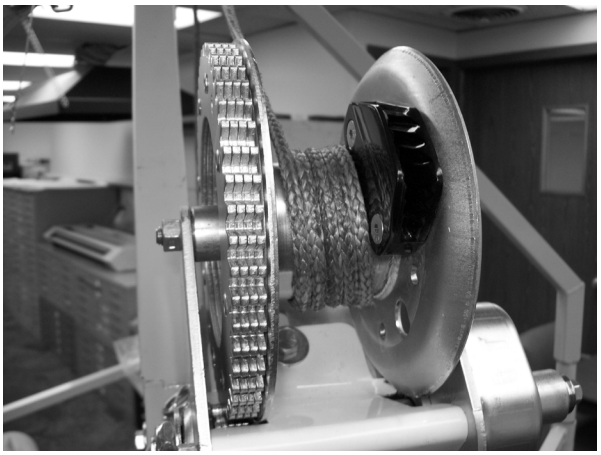
1) First remove thimble from looped end if present. Insert looped end through larger hole on reel.

Rope Hook



2) Secure looped end around rope hook. Ensure loop is completely hooked around rope hook.

3) Rope should now be wound directed into a neat & level coil on the drum while cranking the handle for “take-up” of the lifeline.



! CAUTION ! - The rope must be secured on the hook and wrapped around the drum a minimum of **four** times before a load can applied to the winch line!

iv) Refer to other Applicable Manuals for detailed instructions on threading the rope through pulleys and rollers on the support structure and/or guide blocks (fairleads).

v) Be sure the rope crimps, swivel and snap-lock connectors are in good condition and functioning as intended. See Figure 5c.

vi) Attach the snap hook to the entrant's full body harness. See Figure 5e.

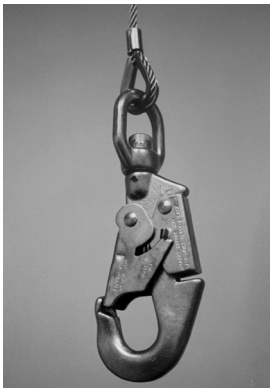


Figure 5c

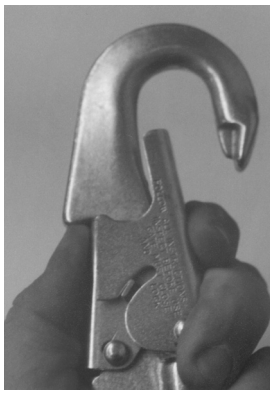


Figure 5d

Figure 5e

b. Lifeline Retraction

i) When the entrant is clear of the confined space and properly supported, disconnect the snap hook from the harness. Maintain at least a 10 lb.(4.5kg.) load on the rope to in order to maintain a neat and tight rope coil on the drum.

ii) Remove the rope from all pulleys and rollers on the support structure (Refer to applicable manual).

iii) Turn the crank handle to retract the rope while maintaining a 10 lb.(4.5 kg.) tension on the cable.

iv) Retract the until the end crimp just touches the drum,

c. Rope Removal

i) Turn the crank handle to pay out all of the coiled rope and then remove the looped rope off of the cleat. The entire rope assembly can be stored separate form the winch in a neat coil.

! CAUTION !: Winding the rope too far could cause damage to the winch as the snap hook is too large to pass between the winch drum and the winch frame. Damage to the rope may also result, affecting the strength of the rope.

d. Winch Removal from Support Structure

i) Remove detent pin. See Figure 5f.

ii) Pull the top of the winch away from the structure and lift the winch up to unhook it from the anchor rod. See Figure 5g. Store as required.

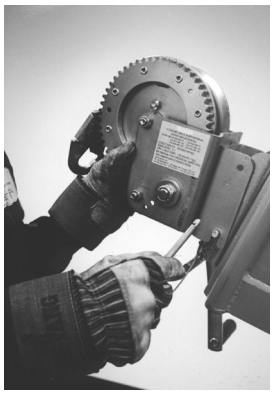


Figure 5f

Figure 5g

6. Load Attachment

a. Pull on the snap hook with at least 10 lbs. (4.5 kg.) force while extending the lifeline until there is sufficient slack to attach to the entrant.

b. Use two hands when attaching to the entrant.

c. Use one hand to apply a steady pull on the lifeline and to steady the snap hook.

d. Use the other hand to depress the lock and open the gate. See Figure 5h.

e. Insert the entrant D-ring into the hook.

WARNING: Always use a full body harness for personnel.

f. Close the gate and be sure the lock clicks into its locked position.

g. Remove all slack from the lifeline.

h. Reverse the above procedure when disconnecting from the load.

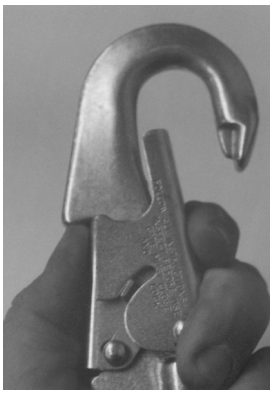


Figure 5h

7. System Integrity

The entrant should always verify the integrity of the attachment and system before entering a confined space. To verify the integrity of the system, follow this procedure:

a. Connect the snap hook to the dorsal ring of the full body harness.

b. Snug up the lifeline on the winch drum.

c. The entrant should slowly lift their feet off the ground and transfer the weight to the lifeline.

d. Be sure the winch holds in a stationary position.

e. Be sure the full body harness is comfortable and does not pinch, chafe or bind. Adjust per manufacturer's instructions before continuing.

f. Do not enter the confined space unless connectors, brakes, winch and harness are functioning properly.

8. Crew Personnel:

A working crew requires the use of at least two (2) people at all times. The entrant who is attached to the end of the lifeline and the attendant who turns the winch crank and guides the lifeline. Each must be properly trained in the use of the equipment for their task. As the entrant enters the confined space, the entrant should maintain constant communication with the attendant operating the winch. Heavy gloves should be worn by the attendant when guiding the rope. The two people must work as a team to perform their tasks safely and efficiently.

9. Entering Confined Space:

When entering confined space, follow this procedure:

a. The entrant should move slowly and smoothly into the confined space (either vertical or horizontal).

b. The attendant should turn the winch handle to pay out the lifeline as required .

WARNING: Do not use the winch if by turning the handle the winch pays out cable when there is no load applied. Slack may develop in the cable and a fall in this situation can result in damage to the winch as well as injury or death to the personnel. Immediately return the winch for inspection.

c. Wearing gloves, place a hand on the lifeline to guide it as it extends. Use your hand to maintain a slight pull on the cable at all times.

d. For a vertical entry, maintain the swing angle at less than 30 degrees while working. The entrant can be seriously injured if the swing angle exceeds 30 degrees. See Figure 5h.

e. If the entrant is not suspended and there is **NO** chance of a fall, pay out sufficient line (2 ft. or 6 m. max.) so it is slack and the entrant can work. Hold the lifeline so there is a slight pull on it at all times.

f. Extend or retract the lifeline as required to keep the line snug.

g. Maintain communication between the entrant and attendant at all times. Be sure each knows what the other is doing.

h. Do not travel around corners when entering a confined space. Body parts, clothing, tools or other items can get snagged when proceeding around a corner and over obstacles during the retrieval procedure. Corners or sharp edges can also damage the lifeline as it passes. Be prepared to perform a non-entry rescue to assist in the retrieval of a down entrant.

i. If the lifeline becomes tight or slack during entry, communicate with the entrant to determine whether there is a problem. Correct the problem before proceeding

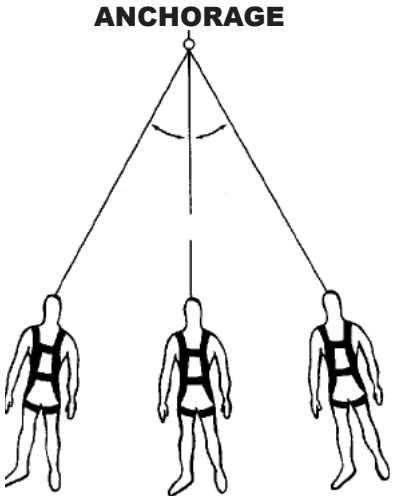


Figure 5h

10. Retrieving From Confined Space

When retrieving from the confined space, follow this procedure:

a. Turn the winch crank handle in order to retract the lifeline and retrieve the entrant from the confined space.

WARNING: Do not use a PWQR (left hand crank handle) Series winch if turning the winch handle counter-clockwise retrieves the lifeline. The internal brakes are engaged only when the handle operating direction retrieves the lifeline when the handle is turned clockwise. Do not use a PWQRR (right hand crank handle) Series winch if turning the winch handle clockwise retrieves the lifeline. The internal brakes are engaged only when the handle operating direction retrieves the lifeline when the handle is turned counter-clockwise.

⚠ CAUTION

Should the entrant become caught around a corner or get snagged or tangled, it may be necessary to enter the confined space and assist the original entrant. This should be considered a new entry or rescue and all regulations apply to the new entrant. E.g. Lifeline. Be prepared for a rescue.

b. Maintain communications with entrant when preparing to retrieve and during the retrieval process.

c. Support the entrant after retrieval and disconnect snap hook.

11. Rescue and Emergencies

The winch is designed for entry and retrieval from confined spaces in rescue or emergency applications. Although fast response is crucial for saving lives, it is still necessary to be aware of and follow all safety and operating procedures. Do not take chances with shortcuts. People's lives are at stake. Use only trained competent people who know the equipment and can safely rescue people from an emergency situation.

12. Operating Hints

a. Follow all applicable OSHA, ANSI and local regulations and standards when using this equipment.

b. Train all operators before allowing them to use the equipment. Conduct regular refresher training sessions with all experienced operators.

c. Inspect and maintain the equipment on a regular basis. Remove defective equipment from service. Keep inspection and maintenance records.

d. It is recommended that the winch be used in conjunction with other Pelsue components and systems. These components and systems have the required function, strength and compatibility for all applications. Use them per their instructions.

e. Review and follow the limitations for the equipment. Do not use in corrosive conditions, toxic atmospheres or around mechanical or electrical hazards without taking special precautions.

f. Plan your project before starting to work. Anticipate all the normal and unexpected needs relating to equipment and procedures and have the appropriate devices at hand before starting. Advance planning can save time and lives.

g. An entrant and attendant are required and must work as a team. Maintain communication at all times.

⚠ MAINTENANCE & INSPECTION

1. Read, understand and follow the User Manual and labeling on the winch before using, maintaining or inspecting the equipment.
2. A regular inspection program is imperative for all confined space entry/retrieval equipment and to maintain documented results of these inspections. Follow the inspection procedure contained in this manual and use the sample inspection form to document the results.
3. Keep instructional and safety signs clean and legible at all times. Clean or replace as required.
4. Lubricate winch as per instructions in Section 6.
5. Remove the equipment from service if a problem is found during the inspection. Return to an authorized repair depot or the factory for service.

6.1 - Maintenance

The following section will address preventative maintenance points of service, that performed periodically will drastically increase the working life of the PWQR Series Man-rated winch. Preventative maintenance will ensure that the PWQR series man-rated winch is always in optimum working condition.

LUBRICANTS

1. Grease:
Use an SAE multi-purpose high temperature grease with extreme pressure (EP) performance. Also acceptable is a SAE multi-purpose lithium base grease.

MAINTENANCE INTERVALS

Daily

1. Visual Inspection
Perform a complete visual inspection. Remove from service if a defect is found.

Weekly

1. Functional Inspection
Perform a functional inspection. Record results and keep documentation.

Bi-Annually

1. Lubricate Shaft Bearings Using SAE 30W Oil

a. Pinion Shaft (3 locations) See Figure 6a.

b. Drum Shaft (2 locations) See Figure 6a.

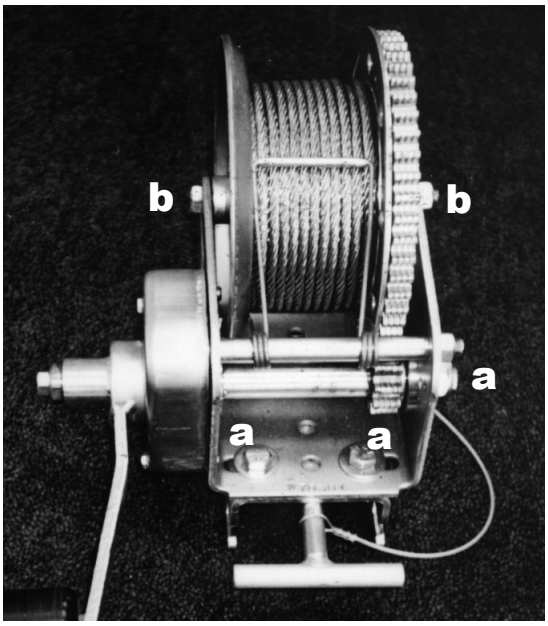


Figure 6a

Annually

1. **Clean Winch**
   Use a damp cloth and mild soap to clean the frame and labels of dirt and residue. Be sure the labels are legible.

2. **Complete Inspection**
   Perform a complete inspection. Refer to section 6.2.3. Record results and keep documentation.

3. **Factory Service Inspection**
   It is recommended that the winch be serviced by a factory authorized service center or the manufacturer after a period of three years.

   Extreme working conditions may indicate the necessity to increase the frequency. Annual servicing shall include but not be limited to an intensive inspection and cleaning of all internal and external components.

   Failure to provide proper service may shorten product life and could endanger performance or function.

6.2.1 VISUAL INSPECTION:

A complete visual inspection should be performed on the winch prior to using. The following items should be checked:

1. Labels:

Check that all the labels are clean and legible. The PWQR series winch has 3 labels and a serial number decal (see Figures 6b and 6c). Clean the labels if any are dirty using mild soap and a damp cloth. Replace if any are illegible. Refer to section 2.1 and 3.0 for specific locations of serial number plate and labels.

2. Fasteners:

Check that all screws and other fasteners are tight. Tighten if any are loose. Replace if any are missing.

3. Frame:

Check the frame and housing for cracks, dents, bends or breaks. If there are major dents or any other structural damage, the unit should be removed from service and returned to the factory for repair.

4. Crank Handle:

Check that each handle on the crank arm is tight. If the crank arm is bent or damaged, remove winch from service. Do not use winch unless crank arm is fully functional.

5. Corrosion:

Check all components for damage from corrosion. Although all components resist corrosion, working in corrosive environments can lead to damage. Inspect the mounting surfaces and fasteners for signs of damage. If damage is found, remove from service and return to the factory for repair.

6. Connectors:

Check the rope collar and clamp for signs of wear, distortion or fraying. Remove from service and return to the factory for repair if any problems are found.

Check the gate and gate lock on the snap hook. Both must open and close easily. See Figure 6d. If they do not, remove from service and return to the factory for service.

Figure 6b

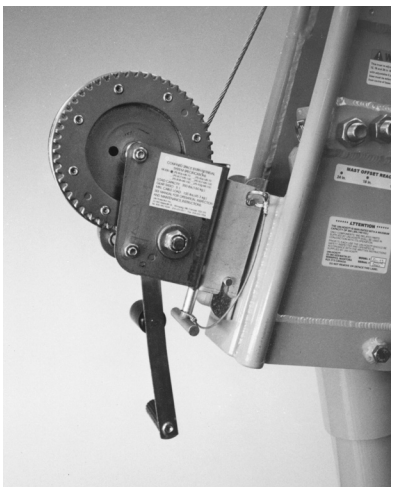


Figure 6c

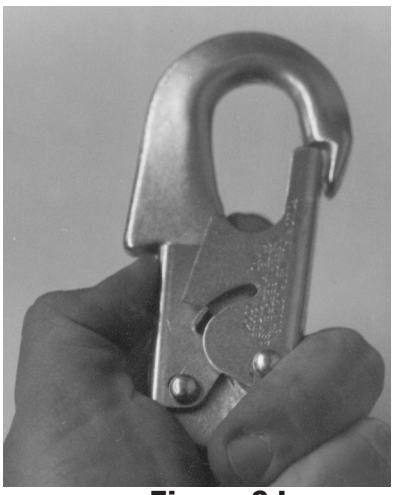


Figure 6d

6.2.2 FUNCTIONAL INSPECTION

A functional check should be performed on the winch every week or more frequently if used extensively. The following functional tests should be done:

1. Winch Crank Rotation Direction:
The winch crank must turn in the clockwise direction to retract the lifeline and counter-clockwise to extend the lifeline for the internal brakes to engage properly. However, the lifeline should **ONLY** extend when there is a load placed on the line. With no load present, turning the handle counter-clockwise should not pay out **ANY** cable. If the winch does, return to the factory for inspection.

2. Snap Hook:
Manually check that the swivel on the top of the snap hook turns easily without sticking or binding. Also check that the gate lock and the gate open and close easily without binding or sticking. If any of the features stick or bind, lubricate with a light oil. If sticking or binding persists, remove winch from service and return to the factory for service.

3. Brake Engagement:
The internal brake must hold the cable from extending or retracting unless the crank arm is turned. To functionally check this feature, extend the cable in 10 foot (3 meter) increments by turning the handle counter-clockwise. At each 10 foot (3 meter) interval, turn the handle clockwise until the cable just begins to retract again. This tightens the handle against the brake pads. Pull sharply on the cable to ensure that the brake pads are holding securely. If they do not hold, remove the winch from service and return to the factory for inspection and repair.

CAUTION: During this inspection step, if the handle is not turned back clockwise to engage the brake pads, pulling on the cable will cause approximately 18 in. (457 mm.) of the cable to pay out until the handle tightens by itself. If the handle does not tighten immediately on its own, remove the winch from service and return to the factory for inspection and repair.

4. Brake Ratchet Mechanism:
The winch is designed with an internal ratchet that engages the brake when the crank arm is turned clockwise. To fully engage the brake, the crank must be turned in the clockwise direction until 2 clicks of the ratchet are heard. If the ratchet does not click when the crank is turned clockwise, remove from service and return to factory for re-work. The ratchet should be silent when the crank is turned counter-clockwise. If the ratchet clicking is heard when the crank is turned counter-clockwise, remove from service and return to the factory for inspection and repair.

6.2.3 DETAILED INSPECTION

A detailed inspection should be done on the winch every year and more often if used extensively. The inspection must include the following, results logged on the sample inspection form and retained in your files should anyone ask to see them. Refer to section 6.2.4 for a sample inspection form.

The detailed inspection should include:

1. Visual Inspection
Refer to section 6.2.1 for a listing of all items that should be checked visually. Log the results on the inspection form.

2. Functional Inspection:
Refer to Section 6.2.2 for a listing of all items that should be functionally checked. Log the results ontheinspection form.

3. Detailed Inspection:

a. Rope Fittings/Snap Hook
Check the rope fitting on the end of the lifeline. Be sure that it is not distorted, bent, corroded, worn, loose or cutting into the rope. Be sure the rope and strands are not frayed or broken.

Check the snap hook. Be sure it is not bent, distorted, cracked or worn. Be sure the swivel turns freely and the gate lock and gate open and close easily.

b. Synthetic Rope Inspection

The rope must be inspected over its full length and the results recorded in the inspection log. Always wear heavy gloves to prevent cuts or slivers while handling the cable. If any cuts or frays are present, remove from service.

i) Tears or Cuts

The synthetic rope consists of an outer jacket and an inner core. Carefully inspect area around cable crimps for tears or cuts in outer jacket. If the inner core is exposed at all, the winch must be removed from service for cable replacement.

ii) Worn or Abraded Outer Jacket:

If the outer jacket shows signs of abrasion, usually resulting in a “fuzzy” appearance, the rope must be replaced. A few threads pulled out of the outer jacket may be clipped off with a pair of scissors, so long as this action does not expose the inner core.

iii) Bulges or Reduction in Diameter:

Check for bulges or reduction in diameter in the synthetic rope. These indicate a serious condition present in the rope. Remove from service if bulges or reductions are present.

iv) Corrosion:

Check for corrosion. Corrosion can be seen as a discoloration of the outer jacket, however, this outer jacket could hide corrosion of the inner core. The rope is safe for exposure to water, however, exposure to other chemical environments may affect the strength of the rope. Check with the factory **PRIOR** to the rope being exposed to such conditions to determine the affect on the rope. If the rope is exposed to an unknown chemical agent, the winch should be returned to the factory so that the rope may be replaced.

v) Knots:

Knots forming in the synthetic rope are a source of weakness in the rope. The rope should **NEVER** be used to tie an item off with a knot. The only way to connect to the synthetic rope is by the snaphook. Any rope that has a knot tied in it should be returned to the factory for replacement.

vi) Heat Damage, Torch Burns or Electric Arcs:

Heat damage, torch burns or electric arc strikes result in the outer jacket melting and becoming hard or brittle. Often there is damage that is done to the inner core that may not be seen by the naked eye. It is possible to completely sever a synthetic rope lifeline in an environment with several spark sources. Extreme care must be taken under these circumstances and regular rope inspections should take place regularly throughout the day while working to ensure rope integrity.

6.3 - Winch Inspection Log

MODEL NO.		SERIAL NO.		MFG. DATE:	
DATE OF INSPECTION					
INSPECTOR					
FRAME & HOUSING					
FASTENERS					
LABELS					
DAMAGE					
CORROSION					
ROPE CLEAT					
HANDLE(S)					
GEARS					
FUNCTION					
EXTENSION					
RETRACTION					
BRAKES					
SNAP HOOK					
DAMAGE/WEAR					
CORROSION					
SWIVEL					
GATE LOCK					
GATE					
ROPE CRIMP					

Sample form. Copy page to start inspection record book. Fill out using ball point pen.

MODEL NO.	SERIAL NO.	MFG. DATE:

		DAMAGE				AT FITTINGS		
ROPE LOCATION*	MEASURED DIAMETER	KNOTS	KINKS	CORROSION	EXCESS WEAR	CORR-OSION	ABRASION	HEAT DAMAGE

7.0 - Storage

Prior to storage, the winch should be thoroughly inspected and maintained. Repair or replace any worn or damaged components to prevent any unnecessary down time at the next use.

Follow this procedure:

1. Thoroughly clean the winch using a mild soap on the frame and labels, be sure all of the labels are legible.
2. Use a neutralizing solution to clean lifeline. This is particularly important if the unit has been used in corrosive or toxic environments.
3. Perform a complete inspection of the winch and document the results prior to storage.
4. Lubricate the winch according to the requirements in this manual.
5. Touch up all nicks and scratches in order to prevent corrosion.
6. Store the winch in a cool, dry place.

For More Information...

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